



*At the Vanguard of
Drying Innovation*



SLUDGE DRYER TECHNOLOGY

&

WASTE MINIMIZATION

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PRODUCT RANGE

Global Leadership in Drying Technology

GEM is at the vanguard of Drying Solutions and Technologies, pioneering advanced drying solutions that cater to a wide range of industries, including Pharmaceuticals, Food processing, Chemicals, Minerals, Fertilizers, Polymers.

- ❑ Presence of our equipment in 50+ countries globally.
- ❑ 70% of our entire production is for Export market.
- ❑ Core expertise in design engineering & supply of various types of dryers and coolers.

- Rotary Dryer
- Rotary Kiln
- Rotary Calciners
- Rotary Cooler
- Paddle Dryer
- Continuous Rotary Vacuum Paddle Dryer
- Static Fluid Bed Drier
- Static Fluid Bed Drier with Thermal Tubes
- Fluid bed coolers
- Vibratory Fluid Bed Drier
- Spin Flash Drier
- Belt Drier
- Band Dryer
- Refractance Window Drier
- Tunnel Drier
- Drying Lanes
- Coolers

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Our Production Facility



Sector specific industries served:

- Chemicals
- Fertilizers
- Polymers
- Minerals
- Steel Plants
- Food Processing
- Tea
- Oil & Gas
- Pharmaceuticals
- Ores
- Wood Chips
- Nutraceuticals
- Coal/Coke
- Sludge
- Fibre Glass
- Nuclear Power

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Why Dry Sludge?

There are economic and environmental benefits for drying sludges and by-products. In municipal and industrial facilities, the Gem Paddle Dryer is reducing disposal cost and converting waste into marketable by-products. The Gem Paddle Dryer provides a reliable and efficient method for drying filter cakes and centrifuge concentrates. For remediation, it is used to remove hazardous volatile organics.

Reduce disposal costs through:

- Reduced weight
- Reduced volume
- Lower landfill fees
- Removal of hazardous volatile organics

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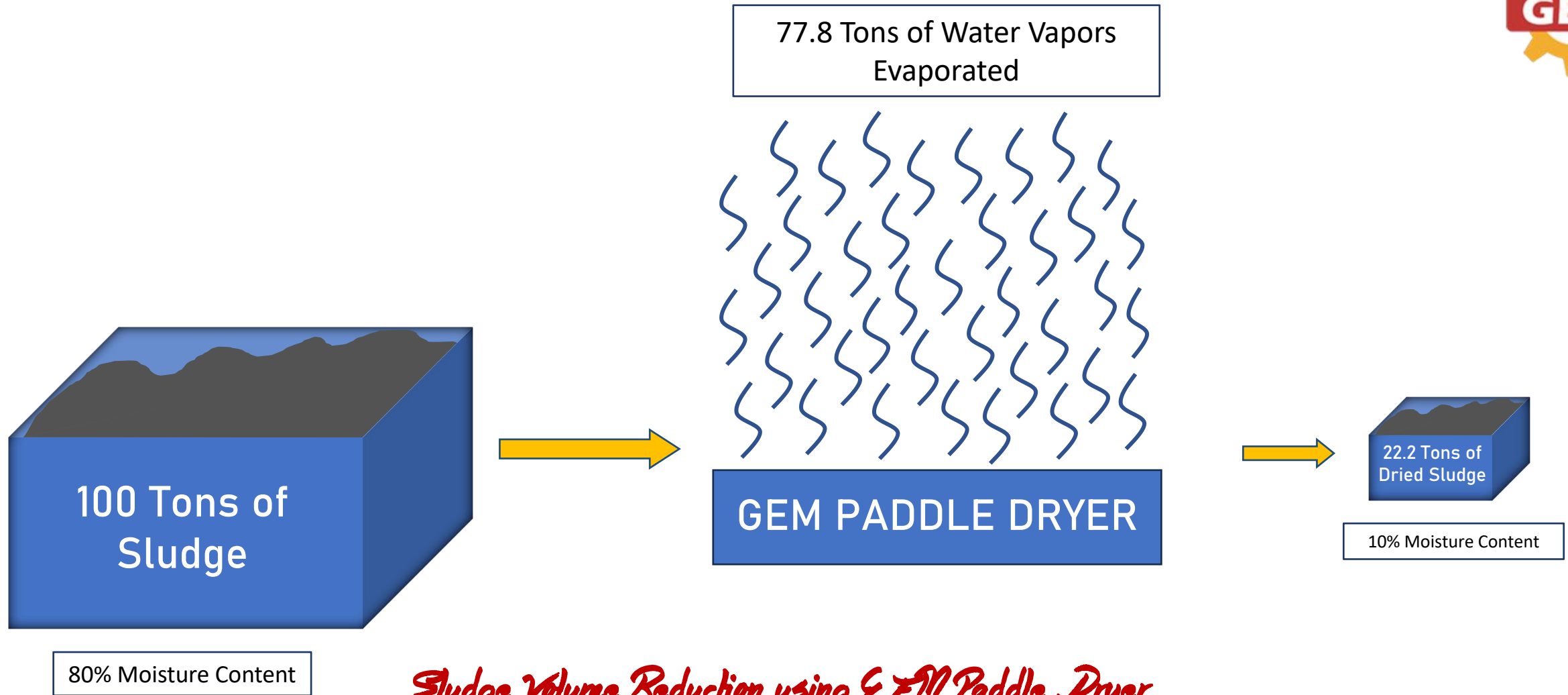
Increase fuel value through:

- Production of autogenous material (self-sustaining combustion).
- Generation of alternative fuel sources.

Produce stable & marketable products through:

- Production of Class A "Exceptional Quality" biosolids (EPA-recognized as a PFRP – Process to Further Reduce Pathogens).
- Conversion into beneficial products.
- Reclaiming residuals for reuse.

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Sludge Volume Reduction using GEM Paddle Dryer

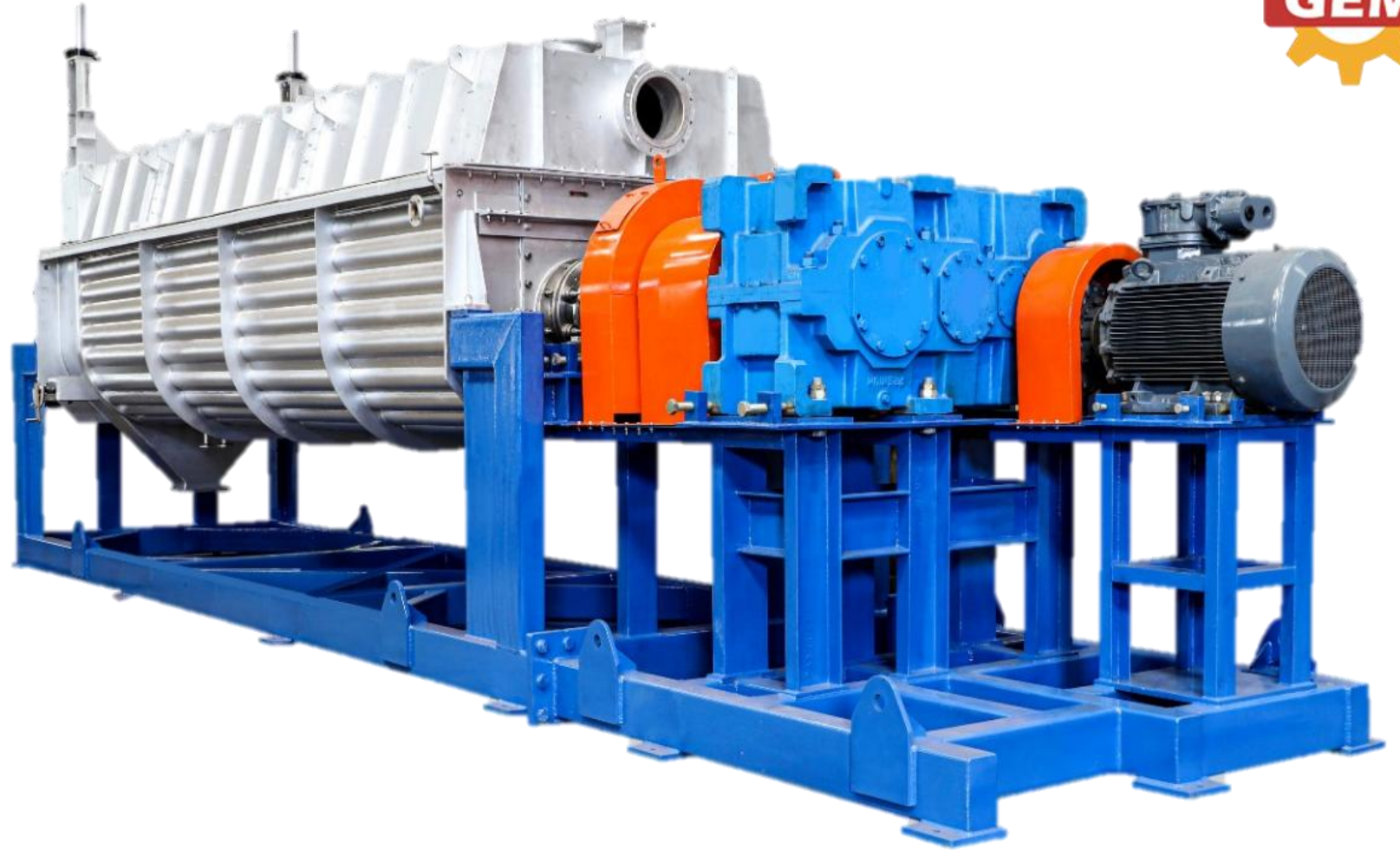
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What is a Paddle Dryer?

- An indirect conduction heating device
- Paddle dryer is perfect for drying of Sludge
- This dryer works by using revolving paddles or blades that come into contact with the sludge particles
- Paddle dryer function without the requirement for back-mixing because the revolving paddles create enough agitation



Twin Shaft & Intermeshing Paddles

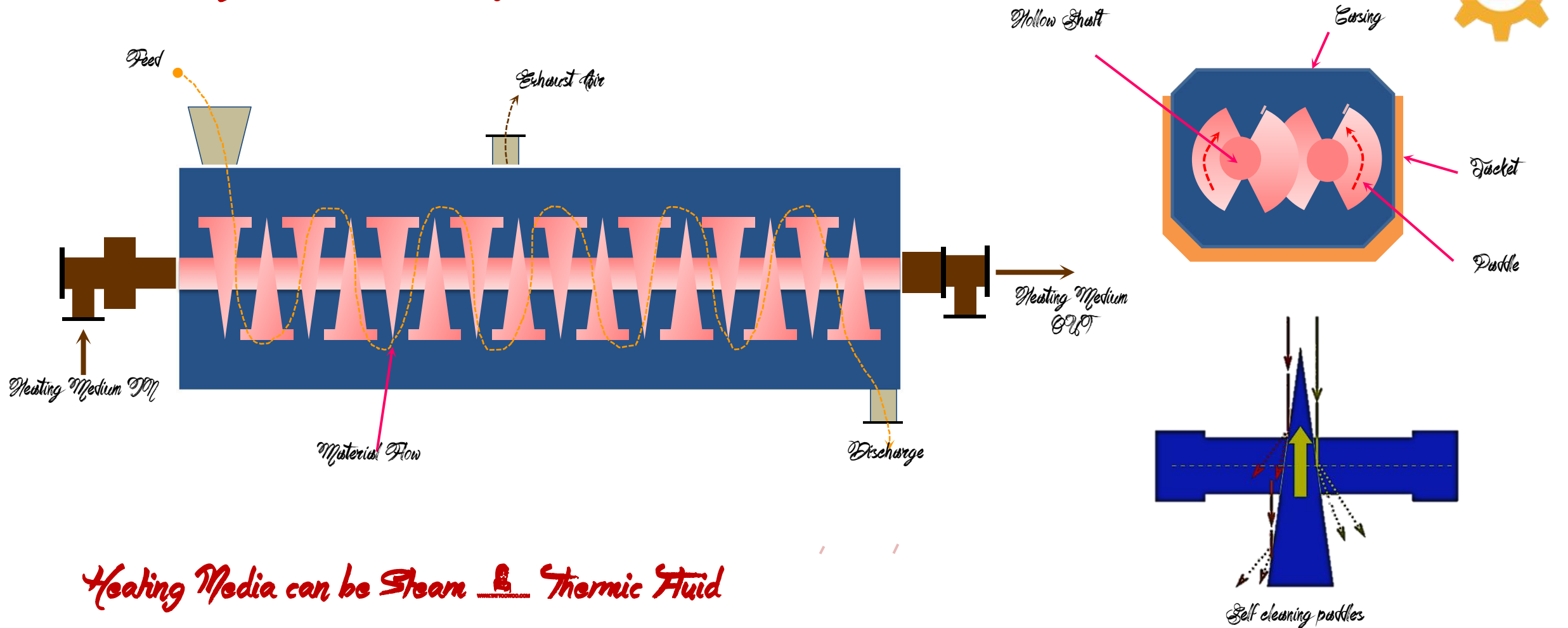


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Schematic diagram of a Paddle Dryer



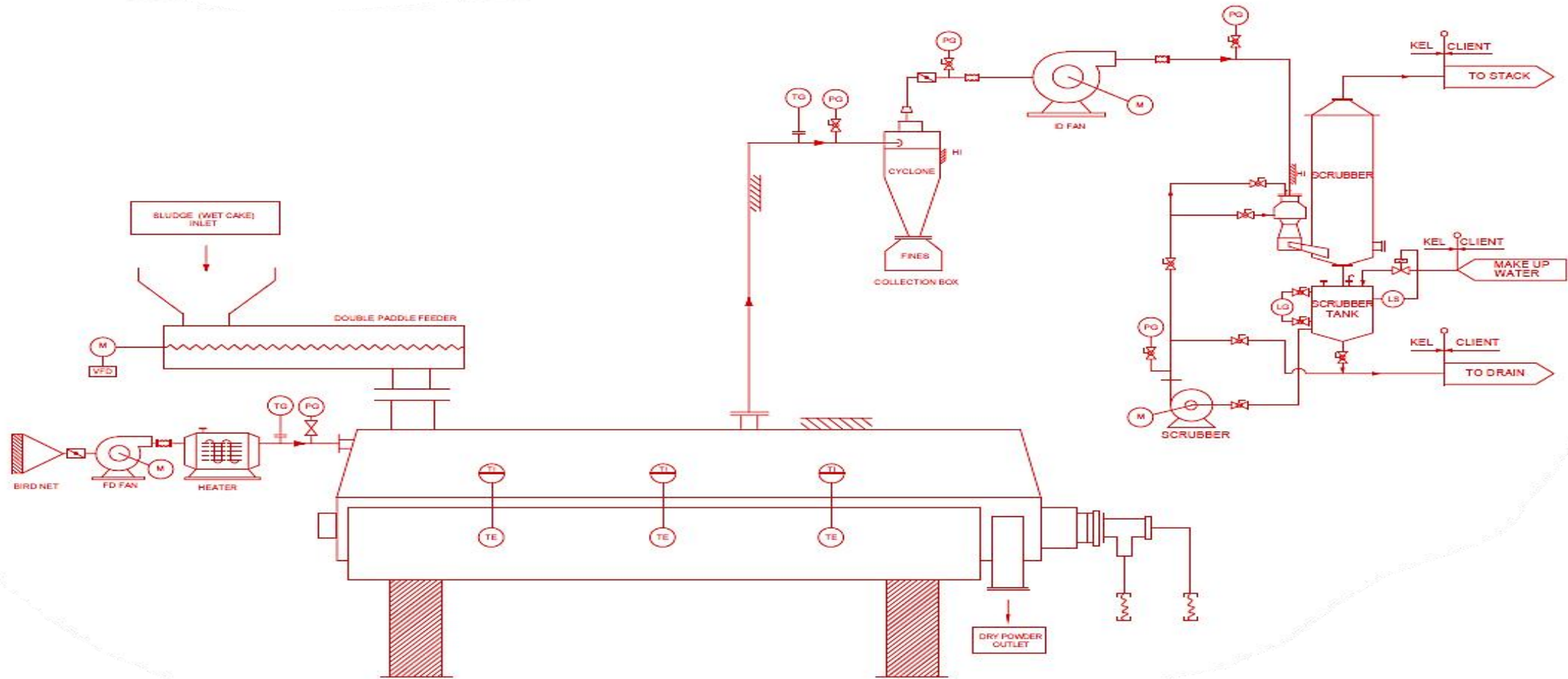
Heating Media can be Steam & Thermic Fluid

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Process flow Diagram of a Paddle Dryer



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What is a Belt Dryer? (Hot Air Dryer for Sludge)



- A Belt Dryer is a type of continuous dryer used in various industries to dry various materials in chemical and including Sludge
- It consists of a conveyor belt that moves the material through a heated chamber, where drying occurs through convection and sometimes radiation.

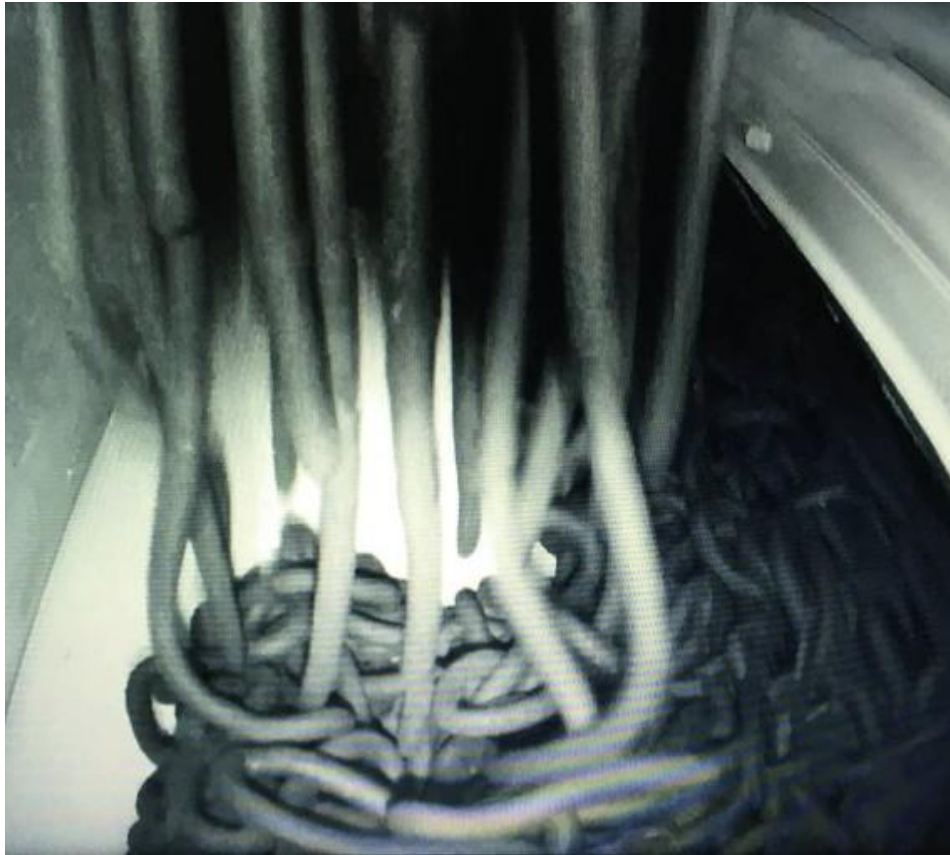


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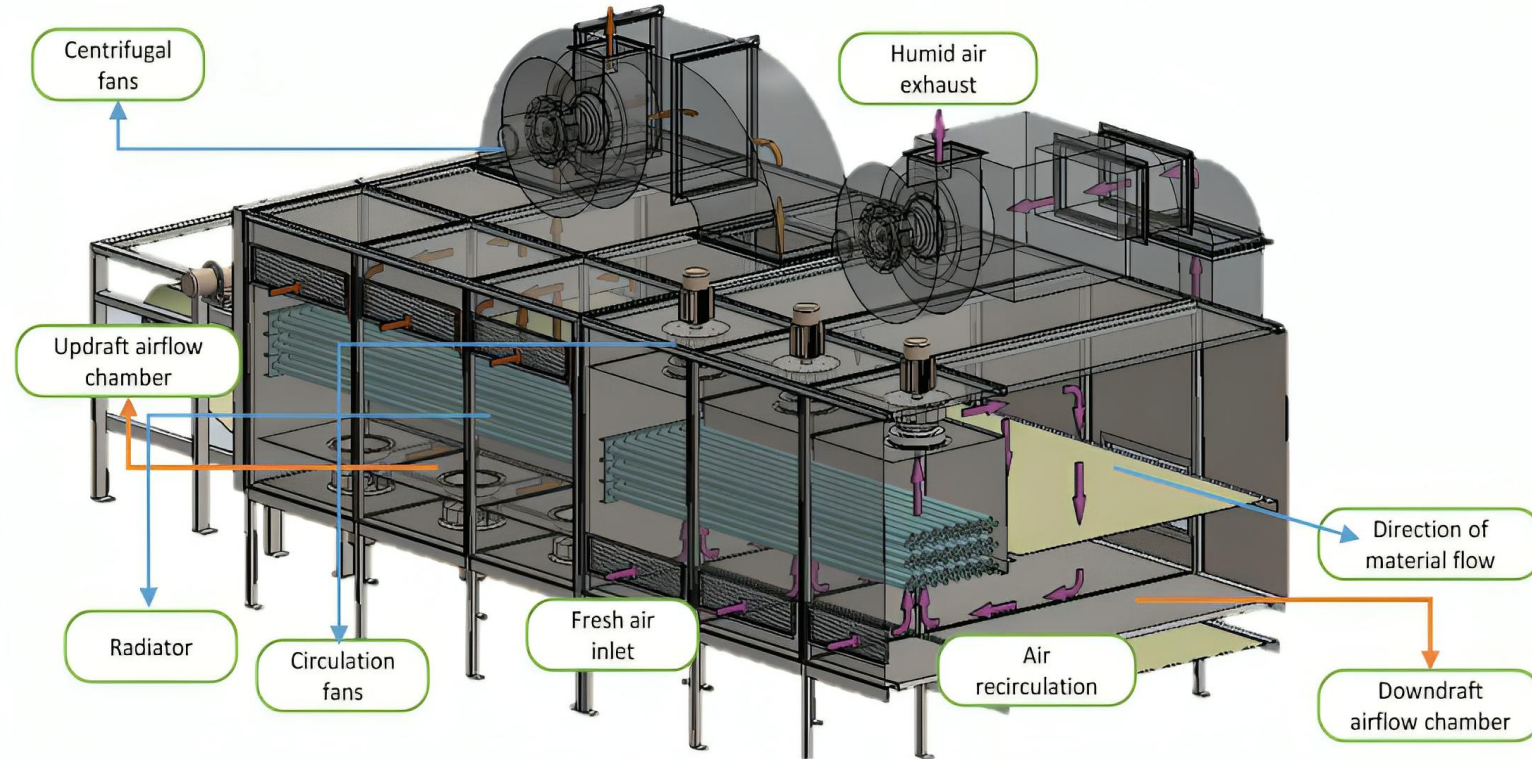


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Extruding the sludge to make noodles before drying



Multi zone air flow pattern inside a Belt Dryer

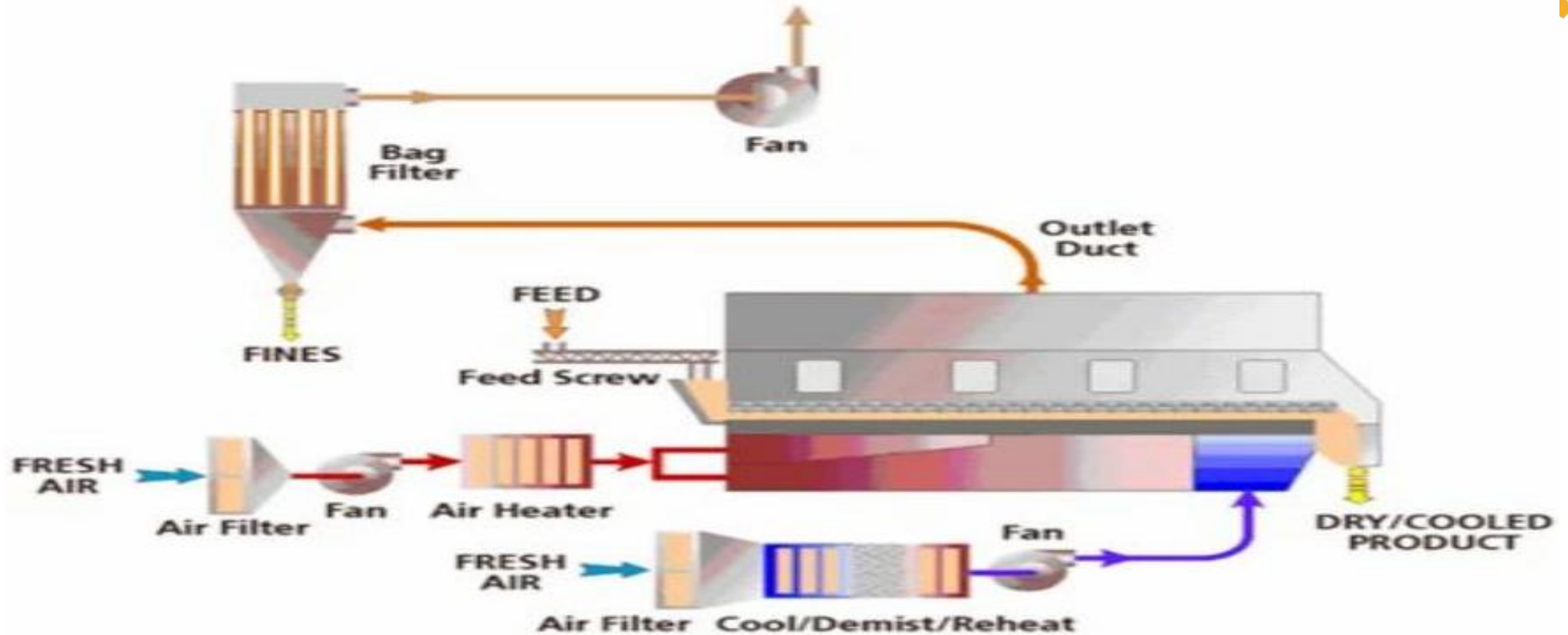


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Schematic Diagram of a Belt Dryer (Hot Air



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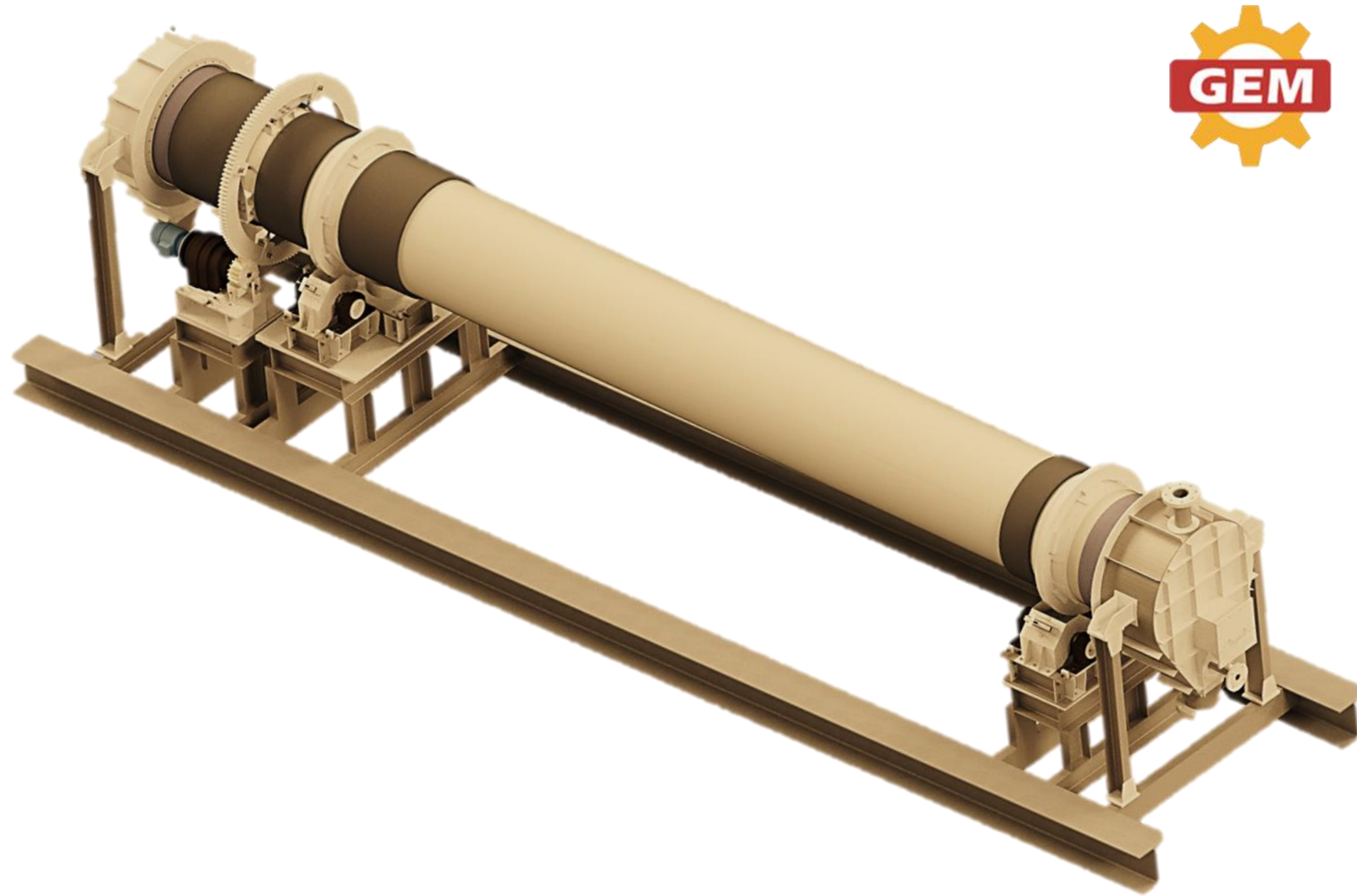


What is a Rotary Dryer & Calciner & Kiln?

A Rotary Dryer & Calciner & kiln is a long, cylindrical, rotating furnace that is used for heat treatment, calcination, sintering, and pyro processing of various materials.

It is widely used in Chemical Industries.

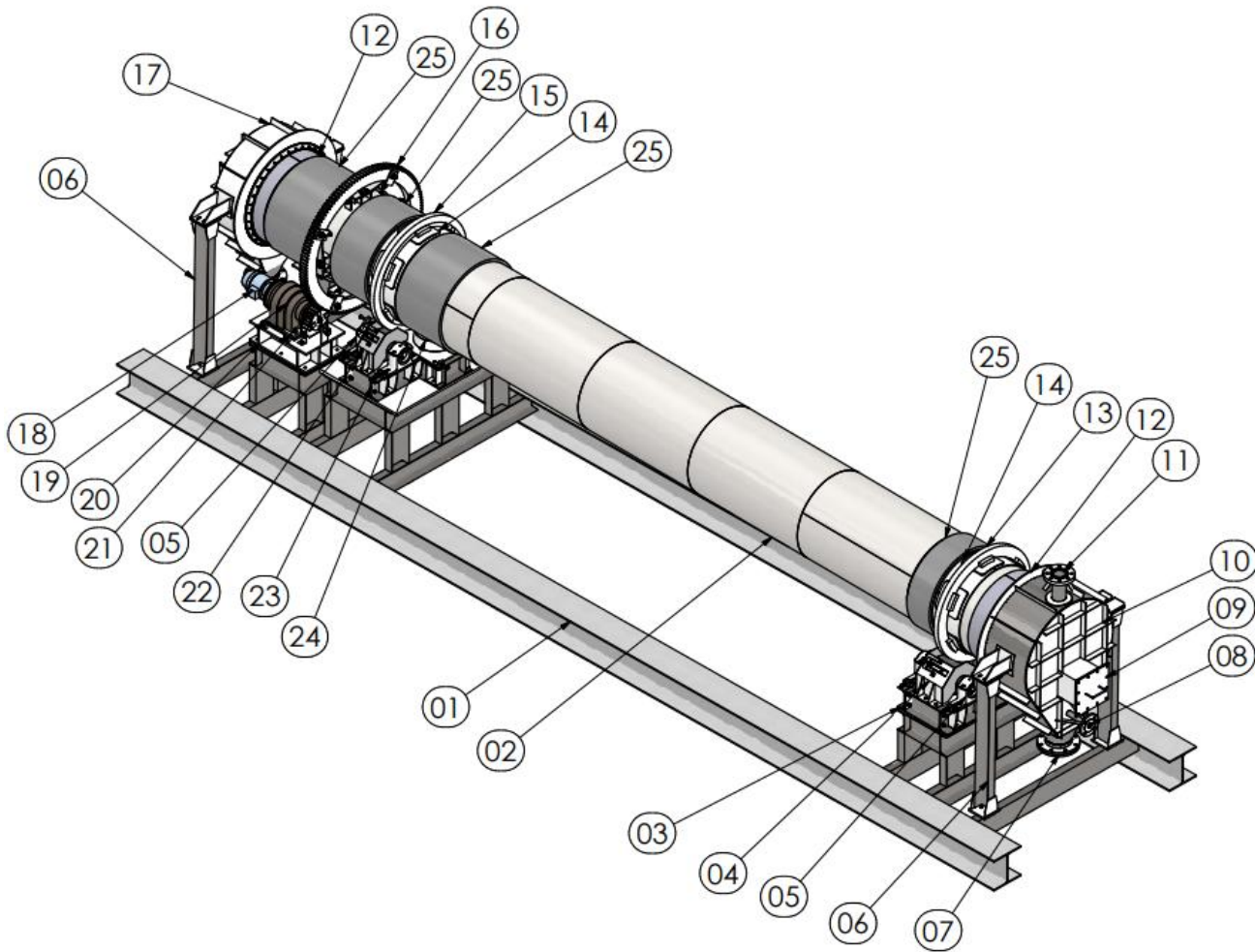
It operates at high temperatures and ensure uniform heat distribution.



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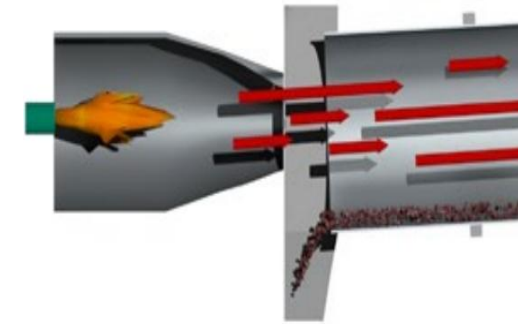


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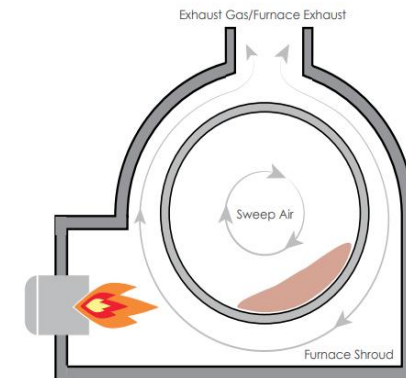


SCHEMATIC DIAGRAM OF ROTARY CALCINER

PARTS LIST	
ITEM	DESCRIPTION
1	SKID
2	SHELL
3	BASE FRAME DISCHARGE END
4	ROLLER GUARD
5	PLUMMER BLOCK
6	HOOD STRUCTURE SUPPORT
7	PRODUCT OUTLET NOZZLE
8	NOZZLE FOR TEMP
9	INSPECTION WINDOW
10	DISCHARGE HOOD
11	AIR VENT NOZZLE
12	SEALING PAD
13	STRAIGHT TYRE
14	TYRE PAD
15	TAPER TYRE
16	GRITH GEAR
17	FEED HOOD
18	MOTOR
19	REDUCTION GEAR
20	BASE FRAME DRIVE ASSEMBLY
21	PINION
22	ROLLER GUARD
23	BASE FRAME FEED END
24	THRUST ROLLER
25	INSULATION



Direct Heating type



Indirect Heating type

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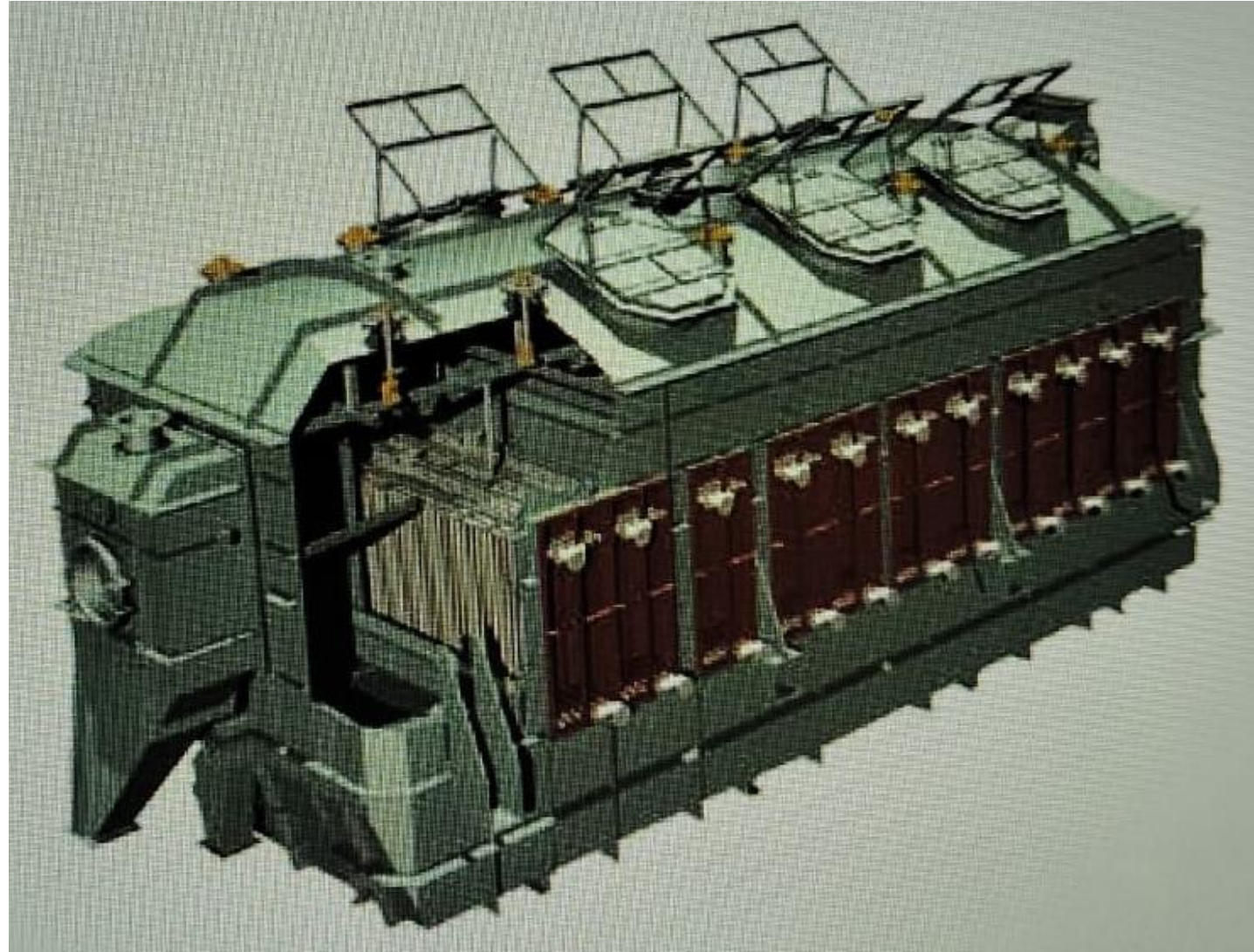
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What is a Fluid Bed Dryer?

A Fluid Bed Dryer is an equipment used in Chemical Ind to dry powders, granules, and other solid materials.

It works by passing hot air through a perforated plate, causing the particles to become suspended and fluidized.

This enhances heat and mass transfer, resulting in quick, uniform & gentle drying.



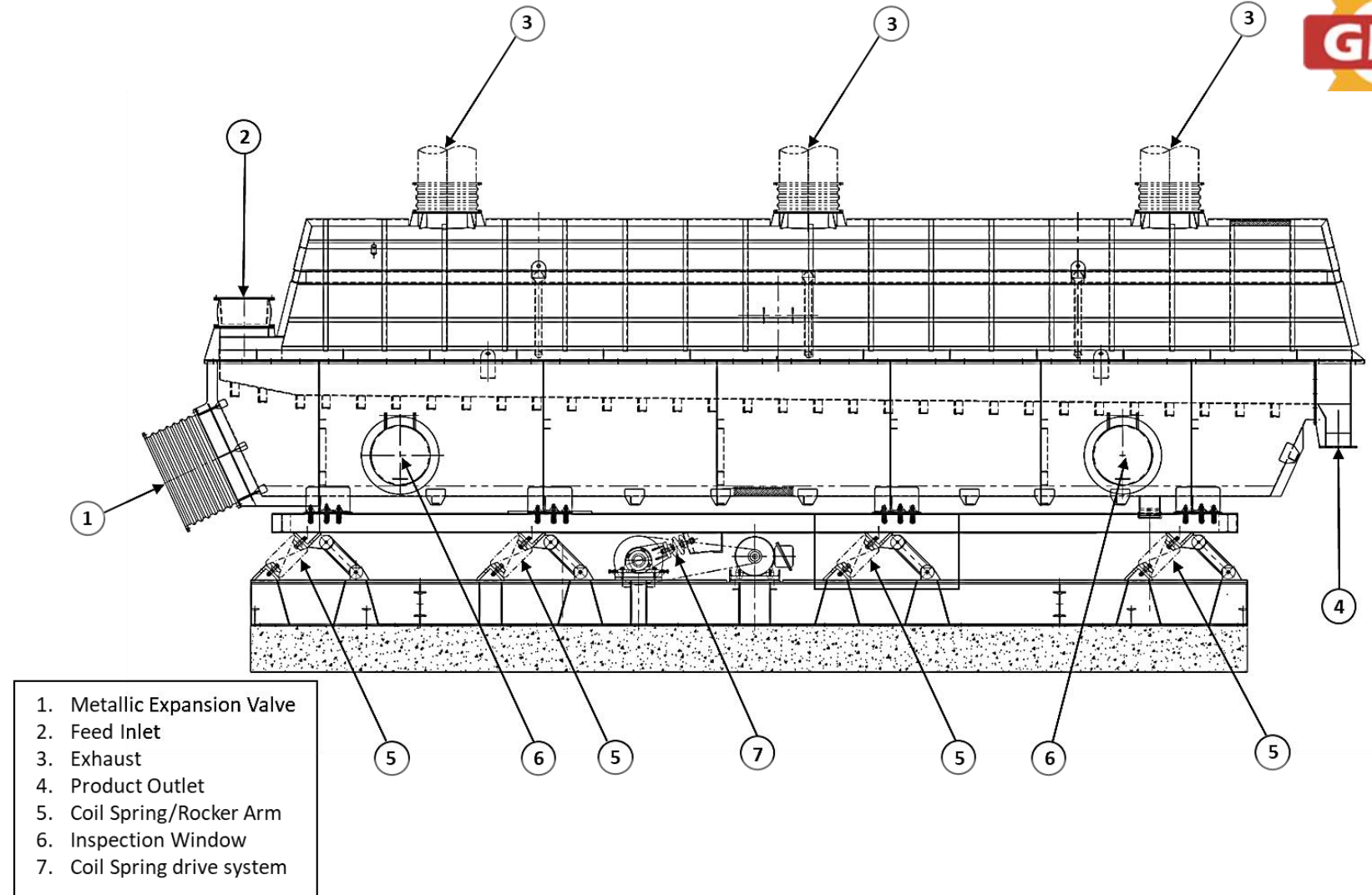
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What is a Vibratory Fluid Bed Dryer?

- A vibratory fluid bed dryer is an enhancement in fluid bed drying equipment that combines fluidization with mechanical vibration to efficiently dry the wet material.
- The hot air or gas fluidizes the particles while vibrations ensure even distribution and prevent clumping, leading to uniform drying and enhanced processing efficiency.



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